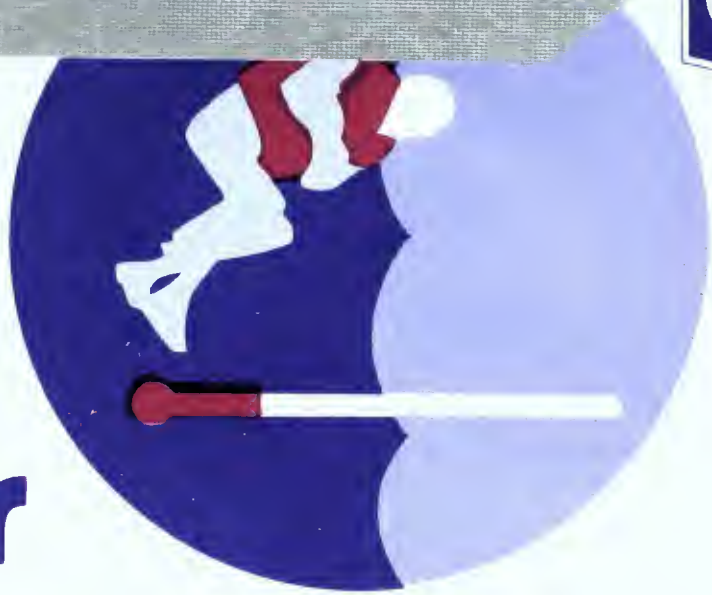
Survival in Cold Water



FOUR CANOEISTS DROWN

It was the last week in February and four young people drowned when their canoe capsized at the base of a dam. The weather that day was spring-like, with bright sunshine and temperatures in the 60's.

The water conditions were just the opposite. Heavy rains had caused the river to crest at flood stage 24 hours before. The water was running high and fast and forty degrees. Paddling upstream on the creek, they approached the dam. Attempting to turn the canoe back downstream, they became caught in the hydraulic current at the base of the dam and capsized. All four of the victims were excellent swimmers, yet they died less than 20 feet from shore.

RIVER CLAIMS TWO HUNTERS

Two young duck hunters, ages 18 and 25, lost their lives in mid-October on the cold waters of the Susquehanna River just above Safe Harbor Dam in York County. The pair had been hunting from a shoreside blind using a 10 foot john boat to retrieve their kill. What caused the boat to capsize is unknown. Perhaps one of the men reached too far over the side and caused the unstable craft to turn over. Perhaps someone stood up to shoot. Their bodies were recovered three weeks later. Neither victim had a personal flotation device.

SCOUT DIES IN CANOE MISHAP

In late March a 15 year old Boy Scout died when his canoe capsized on Lake Pymatuning, plunging him into the 34 degree water. The lad was in excellent health, a good swimmer, and wearing a life preserver. There were two Scouts in the canoe when it took a wave broadside and turned over. One boy was able to hang onto the capsized craft and was rescued, suffering from extreme exposure. The victim had drifted away. A later autopsy indicated he had suffered a fatal heart attack due to the shock of hitting the frigid water.

Though each of the incidents illustrated above is different in nature, through each is woven a common thread—**Cold water and ill-prepared boaters.**

COLD WATER

What is it? It is difficult even for the expert to define. It is estimated to be around and under the temperature of 70° F. However, this will vary in each case due to the specific circumstances and physical condition of the person involved.

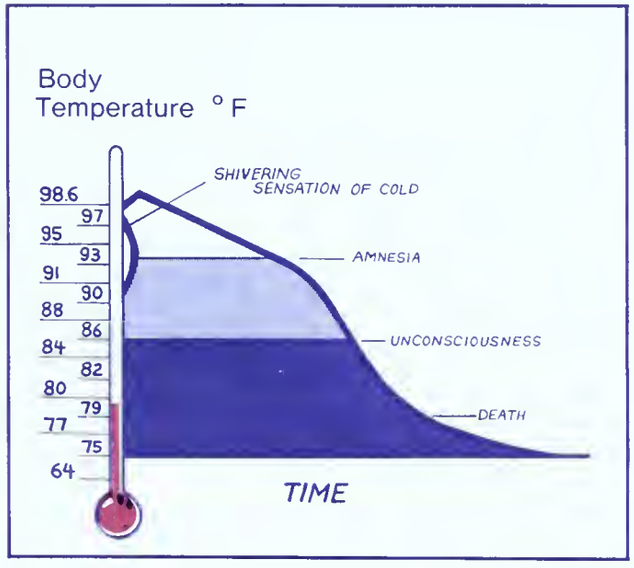
WHAT HAPPENS IN COLD WATER?

Over the past ten years, more than half of the fatal boating accidents in Pennsylvania have occurred in the "out-of-season" months when the water is cold. What happens to the body when suddenly plunged into cold water?

The first hazards an overboard boater must face are PANIC and SHOCK. The initial shock can place severe strain on the body, producing instant cardiac arrest, as happened to the 15 year old scout.

Survivors of cold water accidents have reported the breath driven from them on first impact with the water. Should your face be in the water during that first involuntary gasp for breath, it may well be water rather than air. Total disorientation may occur after cold water immersion. Persons have reported "thrashing helplessly in the water" for thirty seconds or more until they were able to get their bearings.

Immersion in cold water can quickly numb the extremities to the point of uselessness. Cold hands cannot fasten the straps of a lifejacket, grasp a thrown rescue line, or hold onto an overturned boat. Within minutes, severe pain clouds rational thought. And finally, hypothermia (exposure) sets in, and without rescue and proper first aid treatment, unconsciousness and DEATH.



WHAT TO DO IN THE WATER

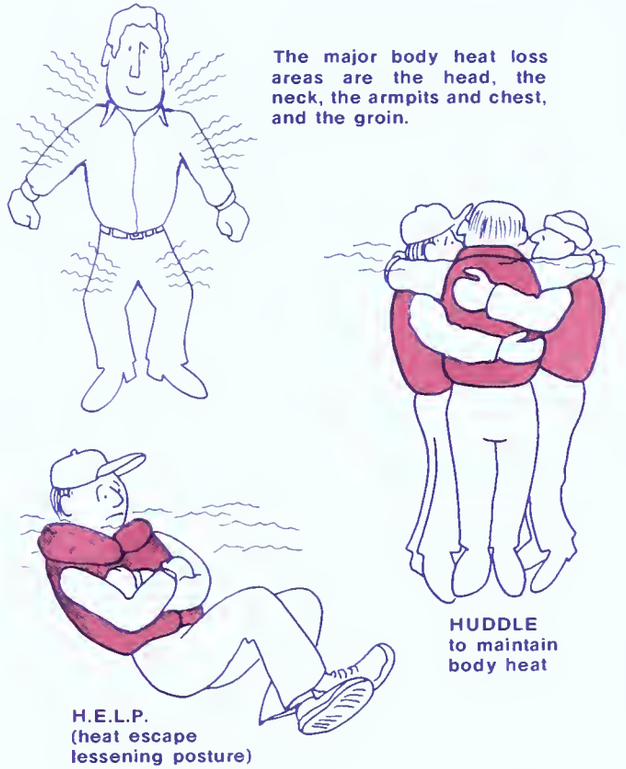
Cold water robs the body's heat 32 times faster than cold air.

If you should capsize or fall overboard, all efforts should be given to getting **out of the water** by the fastest means possible.

Persons boating during the cold water months should be thoroughly skilled in rescue and self-rescue techniques. 90% of all the boating fatalities in Pennsylvania involve small boats—canoes, rowboats and outboards with less than 10 horsepower. With practice, **most small boats can be righted and re-entered.** Most boats, even filled with water, will support the weight of its occupants. If at all possible, right your boat, re-enter it and bail the water out.

If the boat has capsized and cannot be made right, climb on top of it.

Physical exercise such as swimming causes the body to lose heat at a much faster rate than remaining still in the water. Blood is pumped to the extremities and quickly cooled. Few people can swim a mile in fifty degree water. Should you find yourself in cold water and are not able to get out, you will be faced with a **critical choice**—to adopt a defensive posture in the water to conserve heat and wait for rescue, or attempt to swim to safety.



PROTECTING THE BODY FROM HEAT LOSS IN COLD WATER

BE PREPARED

Proper preparation is essential when boating on cold water. Make sure your boat and equipment are in first class condition.

Check the weather forecast before planning your trip. If boating on a river, make sure the water is at a safe level.

Always tell someone where you are going and when you expect to return. When hunting or fishing, form a party and take several boats along. If canoeing on swift moving streams, you should have a minimum of three canoes.

Dress properly for the cold. Several layers of light clothing offer better protection than a single heavy layer. Next to the diver's wet suit, wool clothing offers the best protection.

Always wear a personal flotation device (PFD) when boating on cold water. It is extremely difficult to put on a device in cold water. Swimming or treading water greatly increases heat loss and can shorten survival time by more than fifty percent.

Know what actions to take in an emergency. Practice capsizing and righting small boats in the warm water months.

Should you find yourself in the water, avoid panic. Air trapped in clothing can provide buoyancy as long as you remain still in the water.

Know the dangers of cold water and prepare yourself accordingly.

COLD WATER DROWNING VICTIMS MAY LIVE!

Most persons recovered in cold water "near" drowning cases show the typical symptoms of death:

1. Cyanotic (blue) skin coloration
2. No detectable breathing
3. No apparent pulse or heartbeat
4. Pupils fully dilated (opened)

These symptoms, it was discovered, did not always mean the victim was dead. They were, on the other hand, the body's way of increasing its chances of survival through what scientists call the *mammalian diving reflex*. This reflex is most evident in marine mammals such as whales, seals or porpoises. In the diving reflex, blood is diverted away from the arms and legs to circulate (at a rate of only 6-8 beats per minute, in some cases) between the heart, brain and lungs. Marine mammals have developed this ability to the point where they can remain under water for extended periods of time (over 30 minutes in some species) without brain or body damage.

Humans experience the diving reflex, but it is not as pronounced as in other mammals. The factors which enhance the diving reflex in humans are:

1. **Water temperature**—less than 70°F or colder, the more profound the response and perhaps the more protective to the brain.

2. **Age**—the younger the victim, the more active the reflex.

3. **Facial immersion**—the pathways necessary for stimulating this series of responses seem to eminate from facial cold water stimulation.

The diving reflex is a protective mechanism for humans in cold water immersions, but it may confuse the rescuer into thinking the victim is dead.

Resuscitative efforts for these victims should be started immediately.

Cardiopulmonary resuscitation (CPR) and treatment for hypothermia should be administrated by trained personnel.

CPR

Artificial breathing-artificial circulation
IT CAN SAVE A LIFE

CARDIO PULMONARY RESUSCITATION (CPR)

Cardio Pulmonary Resuscitation (CPR). . . . .the emergency first aid procedure that allows the rescuer to maintain life until a victim recovers sufficiently to be transported, or until advanced life support is available. It involves recognizing respiratory and cardio arrest and starting the proper application of resuscitation.

CPR procedures following a near drowning should be performed as quickly as possible. Optimally, only seconds should intervene between recognizing the need and starting treatment.

CPR is a basic form of life support that can be taught to anyone.

If you have been trained in CPR, review it periodically. If you haven't, contact your local Red Cross as to when you can enroll in the next course.

YOU COULD SAVE A LIFE

For more information the Pennsylvania Fish Commission has several excellent films and a variety of pamphlets on boating and water survival. Call or write: Boating

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